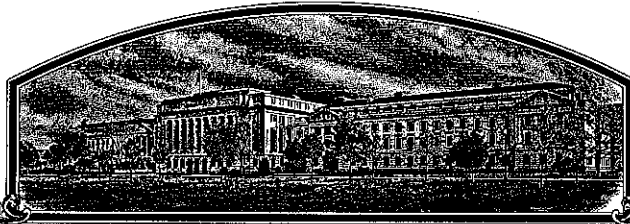


No.

9300019



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Northrup King Co.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXPOSE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT OF 1930, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'S62-66'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this 31st day of October in the year of our Lord one thousand nine hundred and ninety-four.

Attest

Kenneth Heens
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Mike Eszy
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) Northrup King Co.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. X9161	3. VARIETY NAME S62-66
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) P. O. Box 949 Washington, Iowa 52353-0949 Attention: Dr. John C. Thorne		5. PHONE (include area code) 319-653-2181	FOR OFFICIAL USE ONLY PVPO NUMBER 9300019 F I L I N G Date Nov. 12, 1992 Time 9:43 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M. F E E S Filing and Examination Fee: \$ 2150.00 Date Nov. 10, 1992 R E C E I V E D Certificate Fee: \$ 250.00 Date Oct. 4, 1994
6. GENUS AND SPECIES NAME Glycine max	7. FAMILY NAME (Botanical) Leguminosae		
8. CROP KIND NAME (Common Name) Soybean	9. DATE OF DETERMINATION November 1985		
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation		12. DATE OF INCORPORATION 1976	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware			

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Dr. John C. Thorne
Northrup King Co.
P. O. Box 949
Washington, Iowa 52353-0949
PHONE (include area code): 319-653-2181

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

- a. ☒ Exhibit A, Origin and Breeding History of the Variety.
- b. ☒ Exhibit B, Novelty Statement.
- c. ☒ Exhibit C, Objective Description of Variety.
- d. ☐ Exhibit D, Additional Description of Variety.
- e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.
- f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____
- g. ☒ Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.)
☐ YES (If "YES," answer items 16 and 17 below) ☒ NO (If "NO," skip to item 18 below)

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☒ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date. _____)
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES? *88 14 September 1994*
☒ YES (If "YES," give names of countries and dates) *United States, February, 1992*
☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.
The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.
Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT (Owner(s)) <i>John C. Thorne</i>	CAPACITY OR TITLE Soybean Research Dir.	DATE 11/2/92
SIGNATURE OF APPLICANT (Owner(s))	CAPACITY OR TITLE	DATE

EXHIBIT A

Origin and Breeding History of S62-66

In 1981 the Coker breeding group at Hartsville, SC made the cross Co 80-764 x D77-5090 and the following year the Mid-South breeding group at West Memphis, AR made the backcross Co 80-764 x (Co 80-764 x D77-5090) from which the variety S62-66 is derived. Co 80-764 was released as the variety "Coker 485", while D77-5090 was released as the variety "EPPS".

The F1 was advanced to the F2 in the field at West Memphis, during 1983, and the F2 and F3 generations were advanced using a modified single seed descent in two greenhouse plantings at Hartsville, SC during the winter of 1983-84. The F4 generation was subsequently grown in the field at Clarkedale, AR during 1984, as F4 rows #105-114, and single plant selections were made at harvest. The F5 progeny from these plants were evaluated for resistance to race 14 of soybean cyst nematode during the winter of 1984-85, and resistant F5 lines were grown in progeny rows in the field at Bay, AR during 1985. One row # 13,641 was selected, harvested in bulk and designated as Co 86m-902. From 1986-88, Co 86m-902 was tested in yield trials throughout the Mid-South and Southeastern United States. During this period, the line was characterized as possessing purple flowers, tawny pubescence, tan pods and seed with the absence of a seed coat luster and a hilum with a black pigmentation. It was further established that Co 86m-902 was susceptible to Phytophthora rot but tolerant under field conditions. A similar result has been established for the reaction to Stem canker caused by Diaporthe phaseolorum var meridionalis. Co 86m-902 was further evaluated in advanced trials across a wide range of environments from 1990-91 under the experimental designation X9161, and based on its yield superiority and disease resistance, it was released in 1992 as S62-66.

Breeder's seed was produced in 1990 by bulking together seed from similar plant row progenies. Foundation seed was produced and approved by the Arkansas State Plant Board in 1991. Varietal purity will be maintained through routine roguing or by the use of progeny rows as required.

S62-66 is a uniform, stable variety except that it may contain plants with white flowers at a frequency of 1/5,000. During five years of testing and four years of seed increase, we have observed no other off-types except for minor environmentally induced variation in the intensity of hilum pigmentation.

EXHIBIT B

Novelty Statement for the Variety S62-66 Soybeans

Soybean variety S62-66 is most similar to the varieties Coker 485 and S59-60. It can be differentiated from Coker 485 on the basis of resistance to race 14 of the soybean cyst nematode. S62-66 is resistant and Coker 485 is susceptible. It can be differentiated from S59-60 on the basis of seed coat luster and seed peroxidase activity. S62-66 has a dull seed coat and a low seed peroxidase activity, S59-60 has a shiny seed coat and a high, heterogeneous seed peroxidase reaction.

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 LIVESTOCK, MEAT, GRAIN & SEED DIVISION
 PLANT VARIETY PROTECTION OFFICE
 BELTSVILLE, MARYLAND 20705

EXHIBIT C
 (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
 SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Northrup King Co.	TEMPORARY DESIGNATION Co86-902; X9161	VARIETY NAME S62-66
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) P.O. Box 949, Washington, Iowa 52353-0949 Attention: John C. Thorne		FOR OFFICIAL USE ONLY PVPO NUMBER 9300019

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,).

1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = ≤ 1.2)
 3 = Elongate (L/T ratio > 1.2 ; T/W = ≤ 1.2)

2 = Spherical Flattened (L/W ratio > 1.2 ; L/T ratio = ≤ 1.2)
 4 = Elongate Flattened (L/T ratio > 1.2 ; T/W > 1.2)

2. SEED COAT COLOR: (Mature Seed)

1 = Yellow

2 = Green

3 = Brown

4 = Black

5 = Other (Specify) _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')

2 = Shiny ('Nebsoy'; 'Gasoy 17')

4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

5. HILUM COLOR: (Mature Seed)

1 = Buff

2 = Yellow

3 = Brown

4 = Gray

5 = Imperfect Black

6 = Black

7 = Other (Specify) _____

6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow

2 = Green

7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low

2 = High

8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1^a)2 = Type B (SP1^b)

9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')

2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')

3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')

4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

10. LEAFLET SHAPE:

1 = Lanceolate

2 = Oval

3 = Ovate

4 = Other (Specify) _____

11. LEAFLET SIZE:

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☐ 2 1 = Small ('Amsoy 71'; 'A5312')
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

12. LEAF COLOR:

☐ 2 1 = Light Green ('Weber'; 'York')
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

13. FLOWER COLOR:

☐ 2 1 = White 2 = Purple 3 = White with purple throat

14. POD COLOR:

☐ 1 1 = Tan 2 = Brown 3 = Black

15. PLANT PUBESCENCE COLOR:

☐ 2 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

☐ 2 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton')
3 = Bushy ('Gnome'; 'Govan')

17. PLANT HABIT:

☐ 1 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will')
3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

18. MATURITY GROUP:

☐ 0 ☐ 9 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V
9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

☐ 2 Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

☐ 1 Bacterial Blight (*Pseudomonas glycinea*)

☐ 2 Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

☐ 1 Brown Spot (*Septoria glycines*)

Frogeye Leaf Spot (*Cercospora sojae*)

☐ 0 Race 1 ☐ 0 Race 2 ☐ 0 Race 3 ☐ 0 Race 4 ☐ 0 Race 5

☐ 0 Target Spot (*Corynespora cassicola*)

☐ 1 Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)

☐ 2 Powdery Mildew (*Microsphaera diffusa*)

☐ 0 Brown Stem Rot (*Cephalosporium gregatum*)

☐ 1 Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

☐ 1 Other (Specify)
susceptible to common
isolates-race unspecified

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

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FUNGAL DISEASES: (Continued)

☐ 1 Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)

☐ 1 Purple Seed Stain (*Cercospora kikuchii*)

☐ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)

Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)

☐ 1 Race 1 ☐ 0 Race 2 ☐ 0 Race 3 ☐ 0 Race 4 ☐ 0 Race 5 ☐ 0 Race 6 ☐ 0 Race 7

☐ 0 Race 8 ☐ 0 Race 9 ☐ 0 Other (Specify) _____

VIRAL DISEASES:

☐ 0 Bud Blight (Tobacco Ringspot Virus)

☐ 0 Yellow Mosaic (Bean Yellow Mosaic Virus)

☐ 0 Cowpea Mosaic (Cowpea Chlorotic Virus)

☐ 0 Pod Mottle (Bean Pod Mottle Virus)

☐ 0 Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode (*Heterodera glycines*)

☐ 1 Race 1 ☐ 0 Race 2 ☐ 2 Race 3 ☐ 0 Race 4 ☐ 2 Other (Specify) Race 14

☐ 0 Lance Nematode (*Hoplolaimus Colombus*)

☐ 2 Southern Root Knot Nematode (*Meloidogyne incognita*)

☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)

☐ 1 Peanut Root Knot Nematode (*Meloidogyne arenaria*)

☐ 1 Reniform Nematode (*Rotylenchulus reniformis*)

☐ OTHER DISEASE NOT ON FORM (Specify): _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

☐ 1 Iron Chlorosis on Calcareous Soil

☐ 0 Other (Specify) _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)

☐ 0 Potato Leaf Hopper (*Empoasca fabae*)

☐ 0 Other (Specify) _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	S59-60	Seed Coat Luster	Coker 485
Leaf Shape	Coker 485	Seed Size	Coker 485
Leaf Color	Coker 485	Seed Shape	Coker 485
Leaf Size	S59-60	Seedling Pigmentation	Coker 485

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

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VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
Submitted	151	2.4	82	7.9	12.9	36.6	19.9	16.0	2-4
Coker 485 Name of Similar Variety	149	1.7	79	7.6	12.9	37.3	19.5	15.0	2-4

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

EXHIBIT E

Statement of the Basis of Ownership of S62-66

Soybean variety S62-66 was developed by the soybean breeding staff of Coker's Pedigreed Seed Company, which was purchased by Northrup King Co. in July 1988. The germplasm used in the development of S62-66 is cited in Exhibit A of this application.

Northrup King Co. believes that the variety is novel, as defined by the Plant Variety Protection Act; and therefore, that Northrup King Co. is the sole owner of the variety.